(Quercus prinus, Quercus coccinea) / Kalmia latifolia / Galax urceolata Forest

COMMON NAME	(Rock Chestnut Oak - Scarlet Oak) / Mountain Laurel / Galax Forest
SYNONYM	Chestnut Oak Forest (Xeric Ridge Type)
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Deciduous forest (I.B)
PHYSIOGNOMIC GROUP	Cold-deciduous forest (I.B.2)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.B.2.N)
FORMATION	Lowland or submontane cold-deciduous forest (I.B.2.N.a)
ALLIANCE	*Quercus prinus - (Quercus coccinea, Quercus velutina)* forest Alliance
CLASSIFICATION CONFIDENCE LEVEL	1
USFWS WETLAND SYSTEM	Upland

RANGE

Globally

This community is distributed in the central and southern Appalachians, northern Ridge and Valley, and in the Cumberland Mountains. It occurs in Georgia, Kentucky, North Carolina, South Carolina, Tennessee, and Virginia.

Great Smoky Mountains National Park

This community was found on both the Mount Le Conte and Cades Cove quadrangles and is widely distributed elsewhere in the Park. On the Cades Cove quadrangle, recent and historic samples representing this community come from elevations ranging from 2240 to 3940 feet, from all areas of the quadrangle. In the northern portion, this community was sampled on the southern slopes of Arbutus Ridge (2240 and 2280 feet); the eastern slopes (3440 feet) and lower northwestern slopes (2840 feet) of Leadbetter Ridge; and north of Leadbetter Ridge on the north slopes above Anthony Creek. In the central portion of the quadrangle, on the low east and west slopes above Forge Creek, west of Mollies Butt (2657 and 2840 feet); the lower and middle west slopes of Doe Ridge (3000 and 3336 feet); northwest slopes below Powell Ridge, the southern upper slopes and ridges in the vicinity of Mollies Ridge and lower slopes west of Mollies Butt (3200 and 2940 feet); on middle slopes at the northern edge of Gregory's Ridge (2700 feet); and on the middle, southern slopes of Big Grill Ridge (3640 feet). In the southeastern part of Cade Cove quadrangle, this community was sampled from the southwest sideridge of Nuna Ridge (3880 feet) and from the southeast slope of Paw Paw Ridge (2620 feet). On the Mount Le Conte quadrangle, this community was sampled at elevations ranging from 1800 to 3250 feet. In the northern portion of the quadrangle, this community was sampled from low ridges and slopes north and east of Grapeyard Ridge (1800 to 2100 feet). In the western part of the quadrangle, it was sampled on the low west-facing slopes above Cherokee Orchard (2560 to 2720 feet) and the west slopes below Scratch Britches (3250 feet). In the east, this community was sampled on east-facing, low slopes above the Little Pigeon River (1880 feet).

ENVIRONMENTAL DESCRIPTION

Globally

This community occurs over shallow, rocky soils, on south- to west-facing slopes and ridgetops.

Great Smoky Mountains National Park

This community was found on middle to upper convex slopes and ridges with mostly southern and western aspects. Soils can be deep and well-drained or shallow and rocky. This community typically occurs below 3500 feet elevation but was sampled as high at 3880 feet on a dry ridgeline that was once dominated by pine. At least some occurrences of this community are the result of hardwood succession following fire suppression or pine mortality from Southern pine beetle (*Dendroctonus frontalis*).

MOST ABUNDANT SPECIES

Globally

Stratum	Species
Tree canopy	(*Quercus prinus Quercus coccinea)*
Subcanopy	*Oxydendrum arboreum, Nyssa sylvatica, Acer rubrum*
Tall shrub	*Kalmia latifolia, Vaccinium stamineum*
Short shrub	*Vaccinium pallidum*
Herbaceous	*Epigaea repens, Gaultheria procumbens, Galax urceolata*

Great Smoky Mountains National Park

Stratum	Species
Tree canopy	*Quercus prinus, Acer rubrum, Quercus coccinea*
Subcanopy	*Oxydendrum arboreum, Nyssa sylvatica, Acer rubrum*
Tall Shrub	*Kalmia latifolia*

Short shrub	*Gaylussacia ursina*
Herbaceous	*Galax urceolata*
Vine/Liana	*Smilax rotundifolia, Smilax glauca*

CHARACTERISTIC SPECIES

Globally

Quercus prinus, Oxydendrum arboreum, Nyssa sylvatica, Acer rubrum, Kalmia latifolia, Vaccinium pallidum, Galax urceolata

Great Smoky Mountains National Park

Quercus prinus, Quercus coccinea, Acer rubrum, Kalmia latifolia, Gaylussacia ursina

VEGETATION DESCRIPTION

Globally

Forests with canopies strongly dominated by *Quercus prinus* and/or *Quercus coccinea*, with lesser amounts of *Quercus velutina, Quercus rubra, Oxydendrum arboreum, Nyssa sylvatica,* and *Acer rubrum* var. *rubrum*, occurring over a typically dense shrub stratum, dominated by ericaceous species. The shrub layer may vary between evergreen and deciduous dominance. Typical shrub species include *Kalmia latifolia, Rhododendron maximum, Vaccinium stamineum, Vaccinium pallidum, Gaylussacia ursina, Gaylussacia baccata,* and *Leucothoe recurva. Castanea dentata* may occur abundantly as root sprouts. The herb layer is typically sparse and includes subshrubs such as *Epigaea repens* and *Gaultheria procumbens*. Other common species include *Chamaelirium luteum, Chimaphila maculata, Galax urceolata, Magnolia fraseri, Sassafras albidum, Symplocos tinctoria, Smilax rotundifolia*, and *Smilax glauca*.

Great Smoky Mountains National Park

The canopy of this forest is dominated by *Quercus prinus, Quercus coccinea*, and *Acer rubrum*, occurring either singly or in various combinations. Other species found in the canopy and subcanopy include *Carya glabra, Cornus florida, Nyssa sylvatica, Oxydendrum arboreum, Pinus rigida, Quercus rubra, Quercus velutina,* and *Robinia pseudoacacia*. The dense shrub layer is dominated by the evergreen shrub *Kalmia latifolia* and/or the deciduous shrub *Gaylussacia ursina.* Other common shrubs include *Rhododendron maximum, Castanea dentata, Vaccinium hirsutum, Vaccinium pallidum*, and *Vaccinium stamineum.* Stands with a heavy deciduous shrub layer tend to have greater herb density and diversity, but typically herbs are sparse. Common herbs include *Chimaphila maculata, Epigaea repens, Galax urceolata*, and *Goodyera pubescens*. The vines *Smilax rotundifolia* and *Smilax glauca* are common and abundant.

OTHER NOTEWORTHY SPECIES

No information

CONSERVATION RANK G5

RANK JUSTIFICATION

DATABASE CODE CEGL006271

COMMENTS

Globally

In the Blue Ridge-Piedmont transition, below 2800 feet elevation, where this community is often associated with *Pinus rigida* forests and woodlands, *Quercus falcata* may be a component of the canopy, and the shrub stratum is strongly dominated by *Vaccinium pallidum*. In the Great Smoky Mountains *Acer rubrum* is often dominant or codominant in these forests, presumably on former chestnut sites.

Great Smoky Mountains National Park

Many examples of this community are on sites formerly dominated by *Pinus rigida* and *Pinus pungens* and may have these species remaining in the canopy and shrub layers. Other examples occur on sites not dry or rocky enough to support *Pinus*-dominated forests. The canopy and shrub dominants of this community can vary greatly from site to site. This variation is most likely related to a combination of past disturbance regimes and site and soil factors. Stands strongly dominated by *Quercus coccinea* also tended to contain *Pinus rigida* and a dense *Kalmia latifolia* shrub layer. Stands lacking a dense *Kalmia latifolia* shrub layer but rather with a dense deciduous shrub layer also tended to contain high coverage of *Carya glabra* and more herbaceous cover. This community grades downslope into more mesic vegetation such as *Tsuga canadensis* streamside forests and submesic oak forests dominated by *Quercus prinus* and *Quercus rubra*. It grades upslope to more xeric *Pinus*-dominated communities.

REFERENCES

Evans 1991, Golden 1974, McLeod 1988, Nelson 1986, Schafale and Weakley 1990, Whittaker 1956